COMPAQ

User's Guide
Compaq TFT1720

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Compaq TFT1720

17-inch LCD Monitor
(17-inch Viewable Image)

User's Guide

Notice

Important Safety Instructions

CAUTION: **The lightning flash with arrowhead symbol inside an equilateral triangle is intended to alert the user to the presence of uninsulated, dangerous voltage which may be of sufficient magnitude to constitute a risk of electric shock.**

WARNING: **The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and servicing instructions in the literature accompanying the appliance.**

WARNING: **If you are unsure that you can lift the equipment safely, do not try to move it without help.**

Before you connect any cables or install the monitor, refer to the above safety instructions. Also, refer to the set up poster and the documentation included with the PC and the video adapter to ensure this equipment is correctly installed.

For your safety, always connect equipment to a grounded wall outlet. Always use a power cord with a properly grounded plug, such as the one provided with the equipment, or one in compliance with your national safety standards. This equipment can be disconnected from the power by removing the power cord from the power outlet. This means the equipment must be located close to an easily accessible power outlet.

WARNING:	Only use your monitor with the power adapter supplied.
	To avoid electrical shock, do not open the monitor cover or the power adapter. There are no user-serviceable parts inside. Only qualified service personnel should service these parts.
	Make sure the computer is turned off before connecting or disconnecting a display peripheral.

Working in Comfort

To optimize your comfort and productivity, it's important that you set up your work area correctly and use your equipment properly. With that in mind, we have developed some setup and use recommendations based on established ergonomic principles for you to follow.

These recommendations can be found in the online version of the ergonomic guide on the following web site:

www.compaq.com/comfortguide

Before contacting customer services, please refer to the following web site:

www.hp.com/go/support

What the TFT1720 Monitor Offers

What the TFT1720 Monitor Offers

Full scan TFT screen that
gives edge-to-edge image

Anti-glare surface

On/Off
Status LED indicator

Auto/Select
Right Browse/Contrast
Left Browse/Brightness
Menu

Slim and space-saving

The TFT1720 monitor is a liquid crystal display (LCD)
17-inch, high resolution, multi-synchronous color monitor. Multi-synchronous means that the monitor can be used with a range of video modes. It is optimized for use with all HP computers.

The TFT1720 monitor has the following features:

• A 17-inch LCD; thin film transistor (TFT) with an anti-glare, hard coated surface
• Support of video modes up to 1280 x 1024 at a 75 Hz refresh rate
• Analog/Digital interface: a VGA (analog) and a DVI-D (digital) connector enables connection to up to two computers at the same time.

English 5

- True color (16.2 million colors)
- Auto-adjustment of image position, clock, and phase for the VGA interface
- An onscreen display (OSD) manager that allows you to adjust all settings through onscreen menus.
- The monitor has VESA compliant mounting to allow for simple wall or arm mounting (refer to "Removing your monitor's pedestal" on page 14).

NOTE: As an ENERGY STAR partner, HP has determined that this product meets ENERGY STAR guidelines for energy efficiency.

- Compliance with stringent Swedish Low Emissions guidelines TCO '99
- Plug and Play capability (compliant with VESA DDC standard, version 3, revision 1 at level, DDC/2B, version 1) that enables the monitor to identify itself to suitably equipped computers
- Slot for security lock.
- Monitor base integration with HP's All-in-2 accessory to provide an all-in-2 solution with an HP e-pc (see picture on the right)
- Monitor base is designed to accommodate HP's wireless satellite accessory, to provide a wireless office solution
- Compatible with Front Glass Protection kit
- Height adjustment facility
- Pivot enabled to provided portrait-landscape option
- Monitor base designed to accommodate the PC Comm Station.
- Cable Management.

Unpacking the Monitor

Check for the following items. If they are missing or damaged, consult your retailer immediately.

- 1 liquid crystal display (LCD)
- 1 power cord
- 1 DC adapter with an attached DC cable
- 1 video cable (VGA)
- 1 quick user's guide
- 1 warranty booklet
- 1 CD-ROM disc

Setting Up the Monitor

Where to place the monitor

Place the monitor on a flat, sturdy surface. Ensure that the operating site is free from excessive heat and moisture. For best performance, make sure nothing is resting on the monitor.

!

WARNING: **Before you connect any cables or install the monitor, refer to the safety instructions at the beginning of this manual. Refer also to the documentation that came with the computer to ensure this equipment is correctly installed.**

Connecting two computers to the monitor

The monitor has two video signal connectors on the rear panel: one analog (VGA) and one digital (DVI-D). This allows you to connect the monitor to up to two computers at the same time.

Video
connectors
DVI   VGA
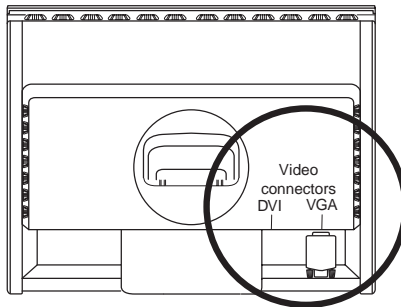
When two computers are connected, you need to use the Input Priority setting on the onscreen display (OSD) to specify which monitor input has priority. See "Input Priority" on page 31.

INPUT PRIORITY

INPUT 2 NO SIGNAL
INPUT 1 ONLY
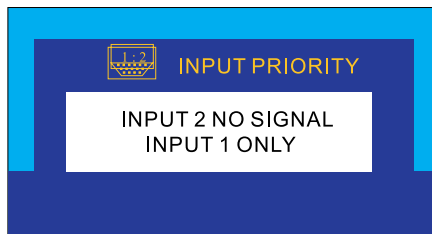
Connecting the cables to the monitor

Look at the following diagram and follow the steps listed below to connect the cables to the monitor.

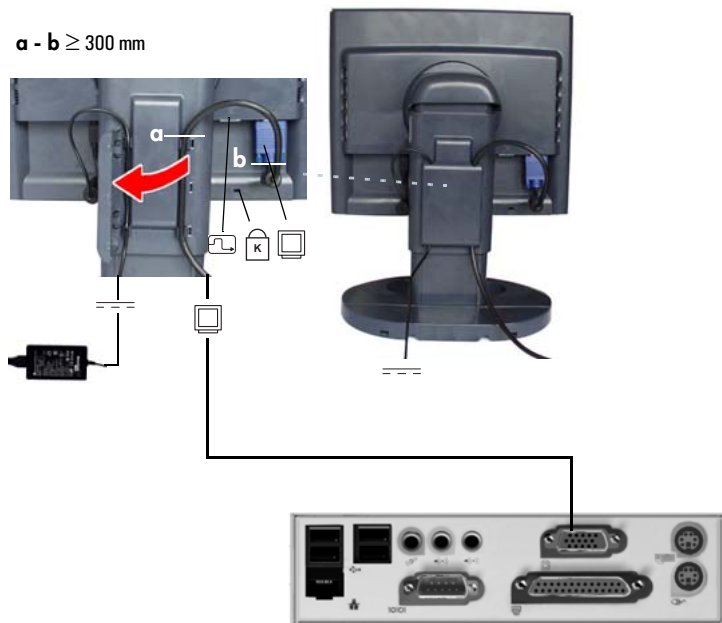|	CAUTION:	This monitor is equipped with an auto-sensing power supply for voltage ranges 100—240 V AC, 50/60 Hz. Use the monitor with the supplied DC adapter only.

a - b ≥ 300 mm

To connect the cables to the monitor:

1   Make sure the computer is turned off.
2   Plug the video cable into the correct video connector (VGA or DVI-D) at the back of the monitor and into the corresponding video connector on the computer. Secure the cable by tightening the thumbscrews.

VGA cable →	VGA connector
DVI-D cable →	DVI-D connector

NOTE: All monitors are equipped with both a VGA and a DVI-D connector and come with a VGA cable. Some models also come with a DVI-D cable. Using both video connectors, you can connect this monitor to up to two computers at the same time.

---

3   Plug the DC adapter cable into the monitor at the back of the LCD panel.
4   Plug the power cord into the DC adapter.
5   Turn on the main power source (for example, a surge protector), and then turn on the power switch for both the computer and the monitor.

To disconnect the cables from the monitor:

1   Turn off the power switch for the monitor and the computer, and then turn off the main power source.
2   Disconnect the power cord from the main power source and the DC adapter cable.
3   Disconnect the DC adapter cable from the connector at the back of the LCD panel.
4   Unscrew the thumbscrews on the video cable(s) and disconnect the video cable(s).

To connect cables from your Comm Station to your monitor:

1   Make sure your monitor and your computer are turned off.

2   Plug the Comm Station's power cable into the monitor at the back of the LCD panel, as shown in the following picture.

3   Connect the L-shaped end of Comm Station's power cable, to the bottom of the Comm Station as shown below.

4   Attach the Comm Station's power cable to the monitor's DC adapter cable.

Securing your monitor

Your monitor can be secured to a desk or to any other fixed object, using a security lock cable. The cable can be attached to a slot located at the rear of the monitor.

NOTE: The security lock is not an HP accessory. It cannot be ordered from HP. Contact your retailer for more information.

Slot for lock
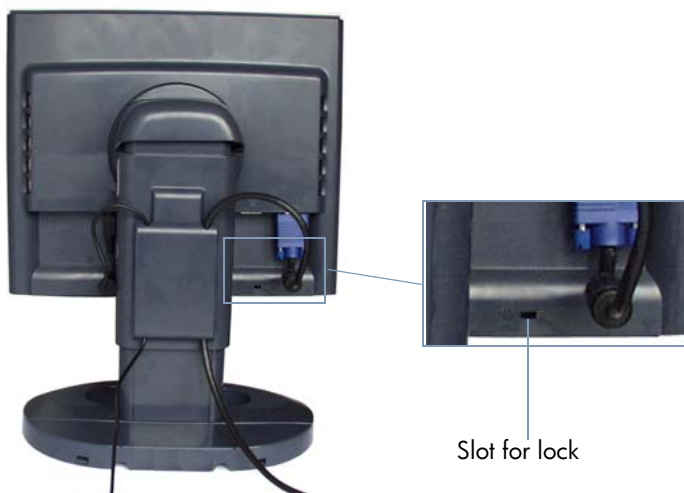
To secure the monitor:

1   Insert the lock in the slot located on the rear of the monitor.
2   Turn the key to lock the cable to the monitor.
3   Remove the key and store it in a safe place.

Changing your monitor's viewing position (selected models only)

To tilt your monitor:

Firmly push or pull the lower part of the screen.

To change your monitor to portrait or landscape:

Your monitor can be rotated to either a landscape or portrait position.
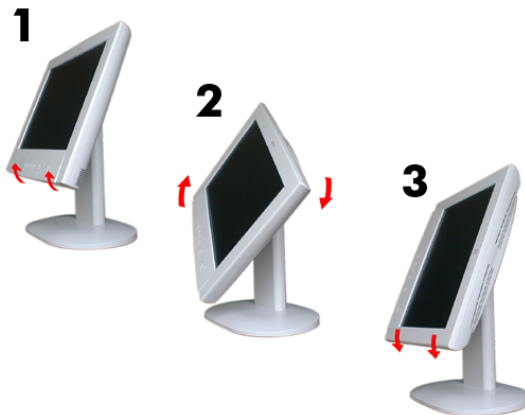
1 Tilt the lower part of the monitor upwards.
2 Rotate the monitor clockwise until the monitor controls are on the left side.
3 Firmly push the lower part of the monitor downwards to secure it in the new position.

To rotate your display, you will need to install the Pivot® software which is supplied with your monitor on the documentation CD.

Removing your monitor's pedestal

This monitor is compliant with VESA Wall Mounting. You can remove the monitor's pedestal to mount the monitor on a wall.

NOTE:	The VESA Wall Mount is not an HP accessory. It cannot be ordered from HP. Contact your reseller for more information.

CAUTION:	**The LCD monitor is fragile.**

1 Place the monitor on a flat, clean surface with the pedestal fully extended.

CAUTION:	**Be careful not to trap your fingers when carrying out step 2.**

2 **Pull** the plastic casing tabs apart (a), then **lift** off the casing (b) as shown in the pictures below.
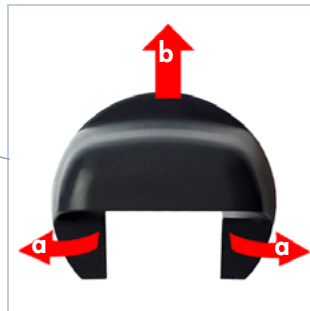
3 Unscrew the metal fixing.

4 **Lift** the pedestal from the monitor.
5 The monitor can now be mounted on a wall.

How to Install the Drivers

The monitor comes with driver software that allows you to take advantage of the Plug and Play feature of the Windows® 95 Windows 98, Windows 2000, or Windows XP operating system. This software enables the computer to communicate with the monitor and use all the monitor features. Without this software, the monitor settings and display images will not be correct.

NOTE: Some computers may be shipped with the Plug and Play drivers preinstalled. If you have an older computer, these drivers may not be preinstalled and you may need to install the drivers from the CD-ROM disc that came with the monitor.

You can also download the latest version of a driver from the following web site at:

www.hp.com/go/support

Windows 95 and 98 Users

1 Click on **Start**, select **Settings**, then click **Control Panel.**
2 Double click on **Display**.
3 Click on the **Settings** tab.
4 Click on **Advanced Properties** or **Advanced** and select the **Monitor** tab.
5 Click on **Change** to select the model of the monitor you are using.
6 Click on **Have Disk.**
7 Click on **Browse** to find the ***.INF** file on your CD-ROM in the root directory and click on **OK**.

Select your monitor type from the **Models** box and click on **OK** to install the selected monitor.

Windows 2000 and XP Users

NOTE: The procedure for installing the driver for your operating system may vary.

To install the driver:

1 Click **Start**, select **Settings**, then click **Control Panel**.
2 Double-click **Display**.
3 Select the **Settings** tab.
4 Click **Advanced Properties** or **Advanced**, and select the **Monitor** tab.
5 Click **Properties**.
6 Select the **Driver** tab.
7 Click **Update Driver** and click **Next**.
8 Select the recommended option and click **Next**.
9 Select the **Specify a Location** box.
10 Find and open the ***.inf** file on the CD-ROM disc in the root directory, and click **OK**.
11 Click **Next** to install the selected monitor driver.

The operating system and your monitor are now set up to work together for the best performance.

If the installation procedure of the monitor driver for the Windows 95, Windows 98, Windows 2000, or Windows XP operating system is different, or if you need more detailed installation information, please refer to the Microsoft Windows information that came with the computer.

Adjusting the Monitor

The monitor display has several adjustable settings which may need to be fine tuned occasionally. Adjust the monitor:

- When the monitor is installed for the first time.
- If the resolution (number of pixels on the display) or refresh rate (vertical scan frequency rate) has been changed.
- If the graphic card has been changed.
- If the monitor is connected to a different computer.
- After using the Mode Recall function. See "To use Mode Recall" on page 28.

NOTE: For best performance, it is recommended that you select a video mode of 1280 x 1024 @ 60 Hz.

Using the monitor controls

There are five controls that perform the following operations:

Menu
Left browse/Brightness
Right browse/Contrast
Select/Auto
On/Off
Status LED indicator
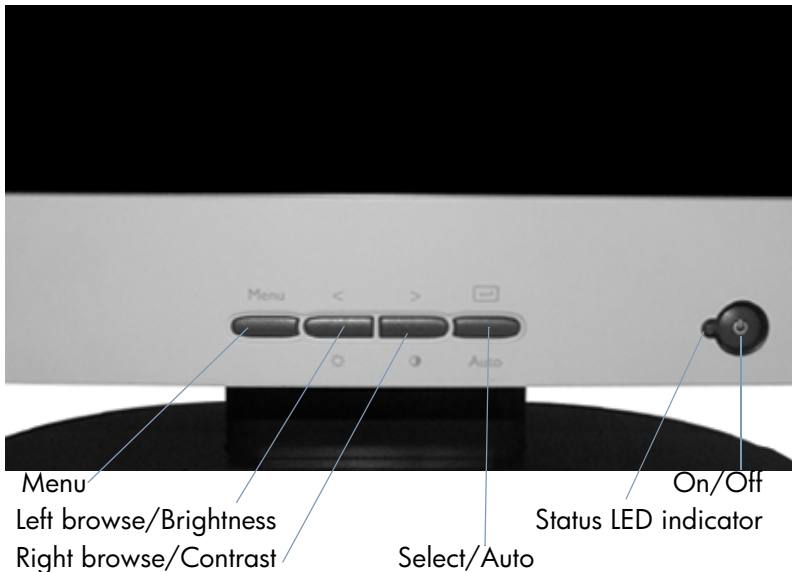
Monitor control buttons

Control button/icon	Function when not in Display Manager	Function in Display Manager
MENU	Menu: Opens and closes the Display Manager window	Closes setting screens and exits Display Manager
< ☼	Left Browse/Brightness: Shortcut to Brightness setting screen	Navigates through setting option icons and adjusts settings
> ◑	Right Browse/Contrast: Shortcut to Contrast setting screen	Navigates through setting option icons and adjusts settings
↵	Select/Auto: (only when the VGA input is selected) Performs an auto-adjustment which will optimize the image quality	Acts as an Enter (Select) key to select setting screen options
⏻	On/Off: Turns the monitor on or off	Turns the monitor on or off

Using the Monitor

Using the On-Screen Display Manager (OSD)

The monitor comes pre-configured to provide the best viewing image. However, you can fine-tune the display using Display Manager. The monitor has control buttons that you can use to open the On-Screen Display Manager to select and adjust display settings.

To adjust display settings:

1 Press the Menu button MENU to open the On-Screen Display Manager.

2 Press a Browse button $<$ $>$ to navigate through the setting option icons; see the setting options table on the next page.

3 When the menu option you want is selected, press the Select button to open the setting screen for that option.

4 Adjust the setting using the onscreen instructions that follow.

5 To exit Display Manager, press the Menu button MENU .
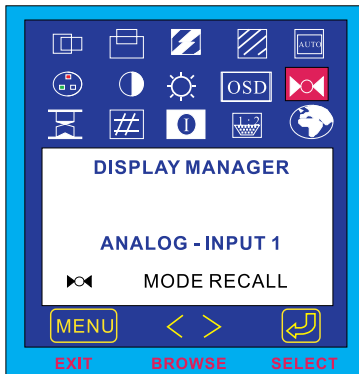
On-Screen Display Manager screen in analog mode (VGA)

On-Screen Display Manager screen in digital mode (DVI)

Setting Options

The icons at the top of the On-Screen Display Manager window represent the different setting options, shown in the table on the following page:

Icon	Setting option	Setting description
	Horizontal Position*	Adjusts the horizontal position of the screen image.
	Vertical Position*	Adjusts the vertical position of the screen image.
	Clock*	Adjusts the frequency of the pixel clock to minimize vertical bars.
	Phase*	Adjusts the phase value to minimize horizontal bars.
	Auto Config*	Auto-adjusts the vertical and horizontal position, producing a stable, centered image.
	Color	Adjusts the tint of white, and the red, green, and blue (RGB) mix for colors.
	Contrast	Adjusts the difference between the light and dark areas.
	Brightness	Adjusts the brightness.
	OSD Manager (OSD stands for on-screen display manager)	Adjusts the position, timeout, and notification features of the Display Manager window.
	Mode Recall	Resets the display to original factory settings for color, brightness, phase, and clock.
	Backlight Info	Shows the status of the light behind the panel.
	Serial Number	Shows the serial number of the display.
	Mode Info	Shows the current resolution and refresh rate; shows if you're in analog or digital mode; and shows how many user settings have been adjusted.
	Input Priority	Sets which video input is active: analog or digital. Shows status of the video input that is active.
	Languages	Shows the language of the OSD window.

NOTE: Horizontal Position, Vertical Position, Clock and Phase settings do not need to be adjusted for displays operating in digital mode (using the DVI input), therefore these icons do not appear in digital mode.

Horizontal Position, Vertical Position, Clock, Phase, Contrast, or Brightness settings

To change Horizontal Position, Vertical Position, Clock, Phase, Contrast or Brightness settings:

1   Open the setting screen you want to adjust.
     See "Using the On-Screen Display Manager (OSD)" on page 20.
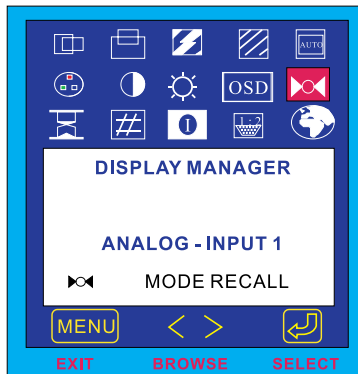
2   Press the Browse buttons to adjust the setting. The setting is automatically saved as you adjust it.

3 Press the Menu button to exit the setting screen.

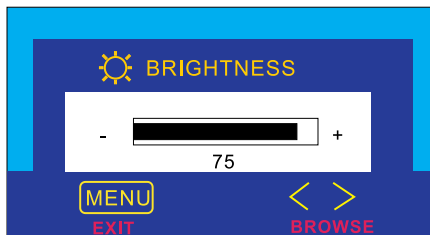- If the viewable image is positioned too far too the right or left, you can adjust its horizontal position. In the Horizontal Position screen, pressing the left Browse button moves the horizontal position to the left, and pressing the right Browse button moves the horizontal position to the right.

- If the viewable image is positioned too high or low, you can adjust its vertical position. In the Vertical Position screen, pressing the left Browse button moves the vertical position down, and pressing the right Browse button moves the vertical position up.

- If vertical bars appear on your screen you can reduce or eliminate them using the Clock function. In the Clock screen, pressing the left Browse button decreases the frequency of the sampling clock for VGA signals, and pressing the right Browse button increases the frequency.

- If horizontal bars appear on your screen, you can reduce or eliminate them using the Phase function. In the Phase screen, pressing the left Browse button decreases the phase of the VGA signal sampling, and pressing the right Browse button increases the phase.

- If the display seems too sharp, you can adjust the contrast setting. In the Contrast screen, pressing the left Browse button decreases the contrast, and pressing the right Browse button increases the contrast.

- If the display appears too bright or dim, you can adjust the brightness. In the Brightness screen, pressing the left Browse button decreases the brightness, and pressing the right Browse button increases the brightness.

Auto-Adjustment function

For the best image quality from your monitor, you may need to adjust VGA specific parameters such as position, phase and clock.

NOTE: The following procedure only applies when using the VGA interface, it is not required when using the DVI interface.

To auto-adjust these parameters:

1 Access the auto-adjustment function by pressing the Select/Auto button on your monitor, then choosing the Auto option from the OSD menu.

2 If the result is not satisfactory, open the "auto adjustment pattern.exe" file on the CD-ROM provided, and repeat step 1.

3 If the result is not satisfactory, use the test-pattern on the CD-ROM provided, access the OSD menu and manually adjust the clock and phase first, then the horizontal/vertical position.

AUTO CONFIG

PROCEED

MENU
EXIT

SELECT
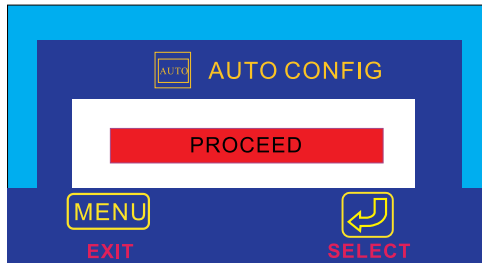
Color settings

To change Color settings

If the color of your display is not satisfactory you can alter the color settings. Open the Color settings screen. See "Using the On-Screen Display Manager (OSD)" on page 20. Four options appear: Bluish, White, Reddish, and User. Bluish, White, and Reddish refer to predefined color temperature. The User setting lets you manually adjust the red, green, and blue (RGB) mix for color generation.

Color

Bluish   (9300K)

White   (6500K)

Reddish   (5800 K)

User   (RGB Save)

MENU   < >
EXIT   BROWSE   SELECT
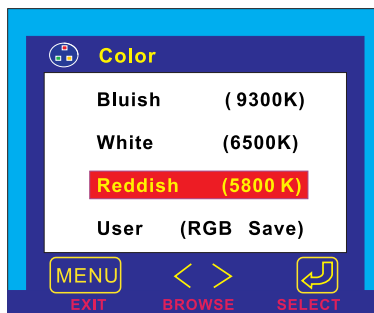
To adjust the Color temperature:

1 Press the Browse buttons to select a color temperature.

2 Press the Menu button to save the setting and exit the setting screen.

To adjust User Color:

1 Press the Browse buttons until User is selected.

2 Press the Select button to open the User Color window.
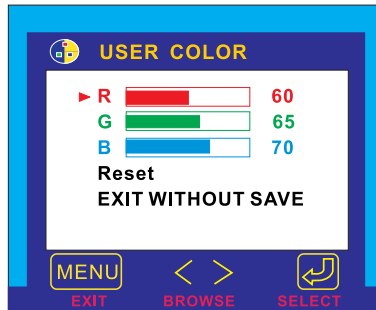
3 Press the Browse buttons to select the color you want to adjust.

4 Press the Select button to activate the adjustable setting for the color.

5 Press the Browse buttons to change the color value. The value is automatically saved as you change it.

6 Press the Menu key to exit the setting screen.

To reset the color settings:

If you adjust a color value and the result is unsatisfactory, you can choose to keep the color values as they were before any adjustments were made by selecting **EXIT WITHOUT SAVE** and pressing the Menu key.

You can reset the values to the original factory color settings even after exiting the Color menu.

1 Access the Color settings OSD.

2 Press the browse buttons to open the User Color window.

3 Use the browse buttons to select Reset.

OSD settings

To change OSD settings:

1   Open the OSD setting screen. See "Using the On-Screen Display Manager (OSD)" on page 20. Five options appear: Protected OSD, OSD Timeout, Inform On/Off, H Position, and V Position.
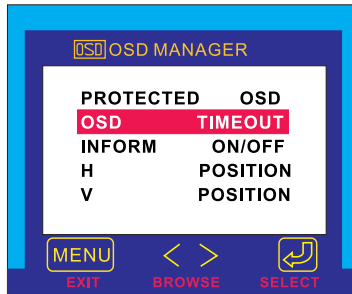
2   Press the Browse buttons to select the option you want to adjust.

3   Press the Select button to display its setting screen.

To activate the Protected OSD:

Using the Protected OSD function allows you to protect the OSD settings.

1   You will be prompted to type a password. Type 040990.

2   Use the browse buttons to select Yes to protect an OSD, and No to deactivate the Protected OSD function.

3   Press the Menu button to exit the setting screen.

To adjust OSD Timeout:

You can set the OSD (Display Manager) screen to turn off automatically when you are not using it.

1   Press the Browse buttons to select how long the Display Manager screen appears before automatically turning off. The setting is automatically saved as you adjust it.

2   Press the Menu button to exit the setting screen.

To adjust Inform On/Off:

Turning Inform on displays the chosen resolution and refresh rate for three seconds, whenever you change them. Turning Inform off prevents this information from being displayed.

1 Press the Browse buttons to select On or Off. The setting is automatically saved as you adjust it.

2 Press the Menu button to exit the setting screen.

To adjust OSD H Position:

You can adjust the horizontal position of the OSD (Display Manager) screen.

1 Press the Browse buttons to position the OSD screen. The setting is automatically saved as you adjust it.

2 When the screen is in the horizontal position you want, press the Menu button to exit the setting screen.

To adjust OSD V Position:

You can adjust the vertical position of the OSD (Display Manager) screen.

1 Press the Browse buttons to position the OSD screen. The setting is automatically saved as you adjust it.

2 When the screen is in the vertical position you want, press the Menu button to exit the setting screen.

Mode Recall

Using Mode Recall restores the original default settings for Color, Brightness, Phase, and Clock. If you make manual adjustments that are unsatisfactory, you can use this function to restore the original settings.

To use Mode Recall

1   Open the Mode Recall setting screen. See "Using the On-Screen Display Manager (OSD)" on page 20. A window with a red bar appears.

```
        ▶O◀  MODE RECALL

          PROCEED

   MENU                  ↵
     EXIT              SELECT
```
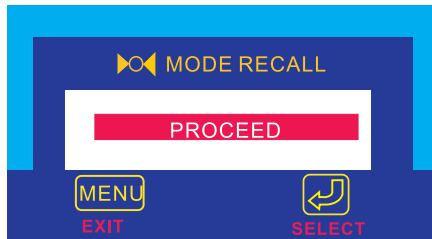
2   Press the Select button to proceed with Mode Recall, or press the Menu button to exit without resetting.

3   If you reset with Mode Recall, press the Menu button to exit the setting screen.

Backlight Info

The Backlight Info window shows the elapsed time of usage for the light behind the display screen. The expected lifespan of the backlight is approximately 30,000 to 40,000 hours. At some point after the maximum usage time of the backlight has been exceeded, you may notice a decrease in brightness of up to 50%. At this point, the backlight needs to be replaced to restore full brightness.

WARNING:	The backlight can be replaced only by a trained technician. Please contact the support team for assistance. Do not attempt to replace the light yourself.

NOTE:	Do not use a screen saver with the LCD monitor, as the backlight will be used. It is recommended that you enable an automatic power saving mode on the PC, or switch off the monitor when not in use.

To view Backlight Info:

1 Open the Backlight Info setting screen. See "Using the On-Screen Display Manager (OSD)" on page 20. The elapsed time is displayed.

2 Press the Menu button to exit the setting screen.

Serial Number

You may need to provide the display serial number to support technicians to help them serve you better during a support call.

To view a Serial Number:

1 Open the Serial Number setting screen. See "Using the On-Screen Display Manager (OSD)" on page 20. The serial number is displayed.

2 Press the Menu button to exit the setting screen.

Mode Info

The Mode Info screen shows whether the current video input mode is analog (1) or digital (2); shows the current resolution and refresh rate; and shows how many User settings you have changed, and how many preset settings have not been changed.

To view Mode Info:

1 Open the Mode Info setting screen. See "Using the On-Screen Display Manager (OSD)" on page 20. The Video Input mode, the resolution and refresh rate, and the number of Preset and User values are displayed.

2 Select the Preset or User values with the Browse buttons.

3 Press the Select button. The Preset or User mode information screen is displayed.

4 Press the Menu button to exit the setting screen.

Input Priority

When connecting two computers to the monitor (one VGA input and one DVI input), the input priority selects the image that will be displayed. (1) represents VGA and (2) represents DVI.

You can use this setting to switch between the two video inputs, analog and digital. The default active video input is analog (1).

To set Input Priority:

1 Open the Mode Info setting screen. See "Using the On-Screen Display Manager (OSD)" on page 20.
2 Press the Browse buttons to switch between Input 1 (analog) and Input 2 (digital).
3 Press the Select button to confirm the new setting. A confirmation screen is displayed.
4 Press the Menu button to exit the setting screen.

Language of On-Screen Display Manager

You can choose to view the On-screen Display Manager in English, German, French, Italian, or Spanish.

To change the language of Display Manager:

1 Open the Languages setting screen. See "Using the On-Screen Display Manager (OSD)" on page 20.
2 Press the Browse buttons to choose the language you would like. The setting is automatically saved.
3 Press the Menu button to exit the setting screen.

Troubleshooting

If you are having trouble with the monitor, these tips may help you solve the problem. Try the following steps before calling the support team.

If you find:

No picture and the light indicator on the front of the LCD panel is off:

- Check that the monitor is turned on.
- Check that the power cord is properly connected.
- Check the electrical outlet.
- Connect the monitor to another computer to determine if there is a problem with the computer rather than with the monitor.

No picture and the light indicator on the front of the LCD panel is on:

- Check that the computer is turned on.
- Check that the monitor is not in power-saving mode.
- Adjust the Contrast and Brightness through the onscreen display or the control buttons.
- Check that the video cable has no bent pins.
- Connect the monitor to another computer to determine if there is a problem with the computer rather than the monitor.

Picture is fuzzy:

- Adjust the monitor using the Auto-Adjustment function. See "Auto-Adjustment function" on page 23.
- If you are running the Windows 95 or 98, Windows 2000, or Windows XP operating system, install the Plug and Play driver (*.inf file). See "How to Install the Drivers" on page 16.
- Change the resolution to the recommended resolution of 1024 x 768 @ 60 Hz.

Pixels are missing:

- See "LCD Monitor Quality and Pixel Policy" on page 34.

Colors are not pure:

• Check that the video cable has no bent pins and is firmly attached to both the computer and monitor video connectors.
• Restore the original factory colors setting. See "To use Mode Recall" on page 28.
• Adjust the RGB (red, green, and blue) colors. See "To change Color settings" on page 24.

Picture is not centered:

• Adjust the monitor using the Auto-Adjustment function. See "Auto-Adjustment function" on page 23.

LCD Monitor Quality and Pixel Policy

HP uses selected high quality panels for the manufacture of its LCD monitors. Nevertheless, the display may have cosmetic imperfections that appear as small bright or dark spots. This is not specific to HP but linked to the current state of the art of LCD manufacturing.

In fact, an LCD screen is made of millions of small "sub-pixels" that are each turned on or off by a transistor and it is extremely difficult to manufacture millions of perfect transistors on a large surface. Therefore, no manufacturer can currently guarantee 100% defect-free panels at a reasonable price.

How visible a defect is depends on its nature an location.

Each pixel is made up of one red, one green and one blue sub-pixel.

- A defect in a sub-pixel is not very visible, and can often only be perceived against specific backgrounds.
- Adjacent sub-pixel defects are more visible than "geographically dispersed" defects.
- A full-pixel defect (all three R/G/B sub-pixels always on or always off) is quite visible.

HP does not accept any full-pixel defects upon shipment. The vast majority of monitors do not have visible imperfections. On the other hand, HP is obliged - for the reasons outlined before - to accept the possibility of a few sub-pixel defects.

HP has established clear standards for the maximum number of imperfections per panel that can be tolerated. Your display has been checked to comply with these standards.

If you are interested in the technicalities you can find the details of HP's pixel policy below.

Details of HP's Pixel Policy

To identify defective pixels, the monitor should be viewed under normal operating conditions, preferably in its native resolution, and from a normal viewing distance of at least 50 cm (16 in.).

Under these conditions the TFT1720 display does not have more than:

- a total of 10 total sub-pixel defects (of whatever nature) or
- 7 defective red sub-pixels or
- 7 defective green sub-pixels or
- 7 defective blue sub-pixels or
- No more than four pairs of adjacent defective sub-pixels i.e. no fully defective pixel.

Technical Specifications

Liquid Crystal Display (LCD)	Display Size	17 in. (43 cm) diagonal and viewable image
	Type	TFT liquid crystal display
Input Signal	Video	0.7 V (0,7) p-p analog RGB
	Synchronization	Separated H/V (TTL level)
Interface	Input Connector	15-pin D-SUB (Analog) DVI-D (Digital)
Scanning Frequency	Horizontal	30–80 kHz
	Vertical	56–75 Hz
Resolution (H x V)	Maximum	1280 x 1024 @ 75 Hz
	Recommended	1280 x 1024 @ 60 Hz
Power Source	AC/DC Adapter	Input Rating: 100–240 V~ auto-range, 2 A max. Output Rating: 12 V ⎓, 4.16 A (4,16 A) Frequency: 50-60 Hz
		Input Voltage: 12 V ⎓ Input Current: 3.5 A (3,5 A)
Power Consumption	Base Unit	Operating mode: 45 W max.
		Sleep mode: 2.3 W (2,3 W)
Operating Environment	Temperature	10° C to 35° C
	Humidity	20% RH through 80% RH (without condensation)
Storage Environment	Temperature	–10° C to 60° C
	Humidity	8% RH through 85% RH (without condensation)
Dimensions (H x W x D)	With stand	418 x 38 x 370 mm (16.5 x 1.5 x 14.6 in)
Weight	With stand	6.4kg (6,4kg) 14.1lb
Tilt Stand	Tilt Angle: Down 5, up 25 degrees	
Security Lock	Monitor cabinet is provided with a slot allowing the use of Kensington™ lock device	

Care and Cleaning

To maximize the screen life span of this product and to prevent damage to the liquid crystal display, it is recommended that you:

• Do not let liquid get on or into the monitor.
• Do not store or use the monitor in locations exposed to heat, direct sunlight, or extreme cold.
• Do not store or use the monitor in a dusty environment or in locations exposed to high humidity.
• Do not press sharp or pointed objects against the monitor.
• Avoid touching or pressing the screen of the monitor.
• Avoid setting contrast and brightness to their maximum levels for prolonged periods.
• Turn off the monitor when not in use.
• Do not place anything on or against the audio base (multimedia models only).
• Use a soft brush or cloth to clean the audio base (multimedia models only).
• Clean the screen with isopropyl alcohol or ethyl alcohol diluted with water (1:1) to prevent damage to the screen's anti-glare coating.

To clean the screen:

1 Turn off the monitor and remove the power plug (pull the plug, not the cable).
2 Soak a soft gauze cloth with isopropyl alcohol or ethyl alcohol diluted with water (1:1) and gently wipe the surface of the monitor. Do not dust it or wipe it with a cloth dampened with pure water.
3 Dry with a clean, soft cotton cloth.

| CAUTION: | **Never use pure water to clean the LCD screen. Do not use cleaning solutions containing fluoride, acids, or alkalis. Do not use ketone substances such as acetone or solvents such as xylene or toluene to clean the monitor. Do not use benzene, thinner, ammonia, or any volatile substance to clean the monitor's screen or cabinet. These chemicals may damage the monitor.** |

Environmental Information

HP has a strong commitment to the environment. The monitor has been designed with respect for the environment as much as possible.

HP can also take back your old monitor for recycling when it reaches the end of its useful life.

HP has a product take-back program in several countries. The collected equipment is sent to one of HP's recycling facilities in Europe or the USA. As many parts as possible are reused. The remainder is recycled. Special care is taken with batteries and other potentially toxic substances; these are reduced to harmless components through a special chemical process.

If you require more details about HP's product take-back program, contact your dealer or your nearest HP sales office.

This product contains the following materials that may require special handling at end-of-life: mercury in the liquid crystal display.

Regulatory Information

<div style="border:1px solid">

DECLARATION OF CONFORMITY
According to ISO/IEC Guide 22 and CEN/CENELEC EN 45014

</div>

Manufacturer's name: HEWLETT-PACKARD France
Manufacturer's address: 5 Avenue Raymond Chanas-Eybens
38053 GRENOBLE Cedex 09 - FRANCE

Declares that the 17" LCD Color Monitor

Product Name	TFT1720
Regulatory Model	D5064**

(* can be any alphanumerical character)

Conforms to the following Product Specifications:

- SAFETY - International: IEC 60950:1991 +A1 +A2 +A3 +A4 / GB4943-1995.
  - Europe : EN 60950:1992 +A1 +A2 +A3 +A4 +A11.

- ELECTRO-MAGNETIC COMPATIBILITY
  - CISPR22:1997 / EN55022:1998 Class B
  - CISPR24:1997 / EN55024:1998
  - IEC 61000-3-3:1994 / EN61000-3-3:1995
  - GB9254-1998
  - FCC Title 47 CFR, Part 15 Class B [1]
  - ICES-003, Issue 3
  - VCCI-B
  - AS/NZ 3548:1995

Products bearing the CE marking[2] also comply with:

IEC 61000-3-2:1995 / EN 61000-3-2:1995. + A14
Those products comply with the requirements of the following Directives and carry the CE-marking accordingly: EMC Directive 89/336/EEC and Low Voltage Directive 73/23/EEC, both amended by the Directive 93/68/EEC.

[1] This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:
  a- This device may not cause harmful interference, and
  b- This device must accept any interference received, including interference that may cause undesired operation.
[2] All products sold in the European Economic Area (EEA) bear the CE marking.

Grenoble
June 2002

Didier CABARET
Quality Manager

For Compliance Information ONLY, contact :
USA contact : Hewlett Packard Company, Corporate Product Regulations Manager
3000 Hanover Street, Palo Alto, CA 94304. (Phone (+1) (650) 857-1501)

Federal Communications Commission Notice

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio or television technician for help.

Modifications

The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by Hewlett-Packard Company may void the user's authority to operate the equipment.

Cables

Connections to this device must be made with shielded cables with metallic RFI/EMI connector hoods to maintain compliance with FCC Rules and Regulations.

Canadian Notice

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Avis Canadien

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Japanese Notice

この装置は，情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）の基準
に基づく クラスB 情報技術装置です。この装置は，家庭環境で使用すること
を目的としていますが，この装置がラジオやテレビジョン受信機に近接して
使用されると，受信障害を引き起こすことがあります。
　取り扱い説明書に従って正しい取り扱いをして下さい。

Korean Notice

사용자 안내문 : B 급 기기

이 기기는 비업무용으로 전자파적합등록을 받은 기기이오니, 주거지역
에서는 물론, 모든 지역에서 사용 하실 수 있습니다.

EPA Energy Star Compliance

Monitors that are marked with the Energy Star Logo meet the requirements of the EPA
Energy Star program. As an Energy Star Partner,HP has determined that this product
meets the Energy Star guidelines for energy efficiency. Specific details on using the
Energy Saving features can be found in the energy saver or power management
section of the computer manual.

Power Cord Set Requirements

The monitor power supply is provided with Automatic Line Switching (ALS). This feature allows the monitor to operate on input voltages between 100-120V or 200-240V.

The power cord set (flexible cord or wall plug) received with the monitor meets the requirements for use in the country where you purchased the equipment.

If you need to obtain a power cord for a different country, you should purchase a power cord that is approved for use in that country.

The power cord must be rated for the product and for the voltage and current marked on the product's electrical ratings label. The voltage and current rating of the cord should be greater than the voltage and current rating marked on the product. In addition, the cross-sectional area of the wire must be a minimum of 0.75 mm² or 18AWG, and the length of the cord must be between 6 feet (1.8 m) and 12 feet (3.6 m). If you have questions about the type of power cord to use, contact your Compaq authorized service provider.

A power cord should be routed so that it is not likely to be walked on or pinched by items placed upon it or against it. Particular attention should be paid to the plug, electrical outlet, and the point where the cord exits from the product.

TCO '99 (European Union Only)

Congratulations! You have just purchased a TCO '99 approved and labeled product! Your choice has provided you with a product developed for professional use. Your purchase has also contributed to reducing the burden on the environment and to the further development of environmentally adapted electronics products.

This product meets the requirements for the TCO '99 scheme which provides for an international environmental and quality labeling of personal computers. The labeling scheme was developed as a joint effort by the TCO (The Swedish Confederation of Professional Employees), Svenska Naturskyddsforeningen (The Swedish Society for Nature Conservation), Statens Energimyndighet (The Swedish National Energy Administration), and SEMKO AB.

The requirements cover a wide range of issues: environmental, ergonomic, usability, reduction of electric and magnetic fields, energy consumption and electrical safety.

Why do we have environmentally labeled computers?

In many countries, environmental labeling has become an established method for encouraging the adaptation of goods and services to the environment. The main problem, as far as computers and other electronics equipment are concerned, is that environmentally harmful substances are used both in the products and during their manufacture. Since it is not so far possible to satisfactorily recycle the majority of electronics equipment, most of these potentially damaging substances sooner or later enter nature.

There are also other characteristics of a computer, such as energy consumption levels, that are important from the viewpoints of both the work (internal) and natural (external) environments. Since all methods of electricity generation have a negative effect on the environment (for example, acidic and climate-influencing emissions, radioactive waste), it is vital to save energy. Electronics equipment in offices is often left running continuously and thereby consumes a lot of energy.

What does the environmental labeling involve?

The environmental demands have been developed by Svenska Naturskyddsforeningen (The Swedish Society for Nature Conservation). These demands impose restrictions on the presence and use of heavy metals, brominated and chlorinated flame retardants, CFCs (freons) and chlorinated solvents, among other things. The product must be prepared for recycling, and the manufacturer is obliged to have an environmental policy which must be adhered to in each country where the company implements its operational policy.

The energy requirements include a demand that the computer and/or monitor, after a certain period of inactivity, shall reduce its power consumption to a lower level in one or more stages. The length of time to reactivate the computer shall be reasonable for the user.

Below, you will find a brief summary of the environmental requirements met by this product. The complete environmental criteria document may be ordered from:

TCO Development
SE-114 94 Stockholm, Sweden

Fax: +46 8 782 92 07

Email (Internet): development@tco.se

Current information regarding TCO '99 approved and labeled products may also be obtained over the Internet, using the address:

www.tco-info.com

Environmental requirements

Flame retardants:

Flame retardants are present in printed circuit boards, cables, wires, casings and housings. Their purpose is to prevent, or at least to delay, the spread of fire. Up to 30% of the plastic in a computer casing can consist of flame retardant substances. Most flame retardants contain bromine or chloride, and those flame retardants are chemically related to another group of environmental toxins, PCBs. Both the flame retardants containing bromine or chloride and the PCBs are suspected of giving rise to severe health effects, including reproductive damage in fish-eating birds and mammals, due to the bio-accumulative*1 processes. Flame retardants have been found in human blood and researchers fear that disturbances in foetus development may occur.

The relevant TCO '99 demand requires that plastic components weighing more than 25 grams must not contain flame retardants with organically bound bromine or chlorine. Flame retardants are allowed in the printed circuit boards since no substitutes are available.

Cadmium:**

Cadmium is present in rechargeable batteries and in the colour-generating layers of certain computer displays. Cadmium damages the nervous system and is toxic in high doses. The relevant TCO '99 requirement states that batteries, the colour-generating layers of display screens and the electrical or electronics components must not contain any cadmium.

Mercury:**

Mercury is sometimes found in batteries, relays and switches. It damages the nervous system and is toxic in high doses.

The relevant TCO '95 requirement states that batteries may not contain more than 25 ppm (parts per million) of mercury. The relevant TCO '99 requirement states that batteries may not contain any mercury.

Both TCO '95 and TCO '99 also demand that mercury is not present in any of the electrical or electronics components associated with the labeled unit. There is however one exception. Mercury is, for the time being, permitted in the back light system of flat panel monitors as there today is no commercially available alternative. TCO aims on removing this exception when a mercury free alternative is available.

CFCs (freons):

The relevant TCO '95 and TCO '99 requirement states that neither CFCs nor HCFCs may be used during the manufacture and assembly of the product. CFCs (freons) are sometimes used for washing printed circuit boards. CFCs break down ozone and thereby damage the ozone layer in the stratosphere, causing increased reception on earth of ultraviolet light with e.g. increased risks of skin cancer (malignant melanoma) as a consequence.

Lead:**

Lead can be found in picture tubes, display screens, solders and capacitors. Lead damages the nervous system and in higher doses, causes lead poisoning. The relevant TCO '99 requirement permits the inclusion of lead since no replacement has yet been developed.

* Bio-accumulative is defined as substances which accumulate within living organisms.

** Lead, Cadmium and Mercury are heavy metals which are Bio-accumulative.